

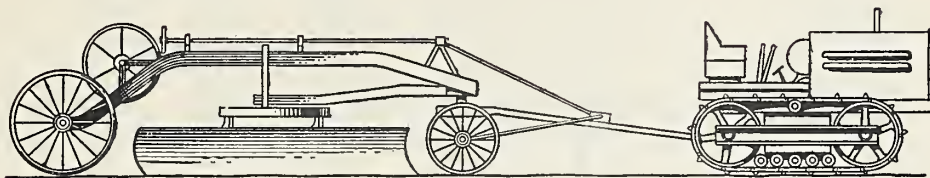
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UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE
WASHINGTON, D. C.

Volume 5

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No. 10

LUBRICATION GUIDE

DETACH DUPLICATE SECTION

This Guide is based on recommendations from the equipment manufacturers and the oil companies. Additional copies are available on request.

The list of trade names does not contain the products of all oil companies, but the information available will make it a comparatively simple matter to extend the list to include lubricants of the types indicated that are available from local companies in your area. Also, the types of lubricants listed were held to a comparatively small number for the sake of reasonable simplicity. To attempt to list every one of the hundreds of types and grades would result in such complication that it would be unusable.

A general discussion on lubrication, classification of Navy Schedule Oils, and the diesel fuel specification previously published with this guide, will be included in the revision of the Truck Trail handbook, to be published in the spring of 1940.

The duplicate section of this issue is to be detached and posted in the camp shop.

GENERAL CLASSIFICATION
Oils (Navy Contract)

Light Oil.....	2075	SAE-60.....	1120 and 3120
SAE-10 (10W).....	2110	SAE-70.....	1150
SAE-20 (20W).....	2135 and 3050	SAE-80.....	1080 and 3065
SAE-30.....	2190 and 3065	SAE-90.....	1100 and 3080 or 3100) and
SAE-40.....	1080, 2250 and 3080	SAE-140.....	1120 or 1150 and 3120) Diff.
SAE-50.....	1100, and 3100	SAE-250.....	5190
		Transformer oil....	9045

Greases and Special Oils

The lubricants listed are general purpose grades. Most of these lubricants may be obtained from the manufacturer in a heavier or lighter grade, as may be required for unusual conditions.

- FS-01 - A light oil of low pour point (-20° F) suitable for cold weather operation of hydraulically controlled equipment and air drills.
- FS-02 - An extreme pressure lubricant suitable for automotive equipment requiring a lubricant of this type, but not intended for hypoid gears.
- FS-03 - A hypoid lubricant for automotive hypoid differential gears.
- FS-04 - Lubricants having a low channeling point for automotive transmissions and differentials.
- FS-G1 - A lime base, water-resistant grease, suitable for grease guns, for plain and anti-friction bearings at normal speeds and temperatures.
- FS-G2 - Similar to G1, but of heavier consistency suited for screw down cups.
- FS-G3 - A soda base grease for normal or abnormal temperatures and speeds under dry conditions, suitable for plain and anti-friction bearings, gear boxes and power transmissions.
- FS-G4 - Similar to G3, but heavier, for wheel bearings, etc.
- FS-G5 - Chassis lubricants for grease guns. (Different manufacturers use different bases).
- FS-G6 - A non-soap grease for heavy exposed gears and wire ropes usually for hot application. Be sure all old grease is removed before application.
- FS-G7 - Similar to G6, but heavier, for warm weather operation (usually applied hot).
- FS-G8 - An unfilled lubricant, for loose and worn plain bearings and where leakage is a problem (not suitable for anti-friction bearings).
- FS-G9 - Similar to G8 but heavier grade (not suitable for anti-friction bearings).
- WP - A waterproof grease for water pumps.

TABLETION OF TRADE NAMES OF VARIOUS TYPES OF LUBRICANTS

F. S. Designation	Type	S. A. E. Viscosity Range	Penetration Range	Standard Oil Co. of New Jersey	Standard Oil Co. of Calif.	General Petroleum Corp. of Calif. Sacoay	Texas Oil Co.	Gulf Oil Co.	Gilmore Oil Co.	Shell Oil Co.	Signal Oil Co.	Union Oil Co. of Calif.	Sinclair Refining Co.	Tidewater Asso. Oil Co.
FS-01	Light Oil	44 Sec. at 210° F.		Zerice 44	Calol Ice Machine	S/V Florex C	Cetus Oil	Eskimo B	#150 Oil	Dione #22		Red Line Hydraulic Oil		
FS-02	Extreme Pressure	90 E.P. 140 E.P.			R.P.M. E.P.		Hypoid Thuban	Gulf E.P.	Gilmore E.P.	Super Gear Lub.	Hypoid E.P. Gear Lub.	Red Line E.P. Gear Lub.	Opaline E.P. Gear Lub.	E. P. Lub.
FS-03	Extreme Pressure Hypoid	90 E.P. 140 E.P.		Esosoleum Expre Compound	R.P.M. Hypoid Lub.	Gargoyle Mobil-grease CX & CXH	Thuban	Gulf Hypoid	Special Hypoid	Hypoid Gear Lub.	Hypoid E.P. Gear Lub.	Red Line Hypoid Lub.	Extreme Duty Hypoid Lub.	Hypoid Lub.
FS-04	Transmission & Differential	90 140 250		Esosoleum Gear Oil	R.P.M. Gear Lub.	Gargoyle Mobil-oil	Thuban Compound	Transmission Lub.	600 Gear Lub.	Trans-mission Oil	A.P. Gear Lub.	Form Gear Lub.	Opaline Gear Lub.	Gear Oil
FS-05	Lime Base		300	Castro-leum 0			Star Grease 00	Supreme Cup #1		Unedo Cup Grease #1		Red Line Cup #2	Opaline Pressure System Grease	Cup Grease #1
FS-06	Lime Base		200	Castro-leum 2	R.P.M. Cup Grease	Gargoyle AA - #3	Star Grease #3	Supreme Cup #2		Unedo Cup Grease #3	Cup Grease #3	Red Line Cup #3		Cup Grease #3
FS-07	Soda Base		Over 300	Esosoleum A & A4	Calol H.M.P. #1	General Gargoyle XX or XXX	Marfak #1	Triplex Lub.	Gear Lub. Medium	Indus Grease #3	Gear & Special Gear Grease	Bell Roll Light or X-Light	Bearing Grease A.F.	Electric Motor Grease
FS-08	Soda Base		200	Esosoleum B & C	R.P.M. Wheel Bearing	Gargoyle Mobil-grease #5	Marfak #3	H.M. Grease	Wheel Bearing Lub.	Wheel Bearing Grease	Wheel Bearing Grease	Red Line Wheel Bearing Lub.	Opaline Universal Grease	U.W. Lub. Heavy
FS-09	Base as Indicated		250 to 400	Chaeale Lub. L.H. & XX Spec. Lime	R.P.M. Chassis Lub.	Gargoyle Mobil-grease #2	Marfak #1 & #2 (Soda)	Chassis Lub. Lime-Sum. Alum-#1in.	Sturdy Chassis Lub.	Super Chassis Lub.	High Pressure Lub.	Red Line Chassis Lub. Alum. Base	Opaline Chassis Lub.	Chassis Lub. W.C. or S.G. Alum. Base
FS-10	Non-Soap		Winter Type	Surrett Comp. 800 - hot 890 - cold	Calumet Comp. #6	Gargoyle Viscolite #10	Crater Comp. #1 Cold	Lubcote Medium hot	Pinion Grease #2	Cardium Comp. #10	Pinion Grease Soft	Red Line Dark Pinion or Unacal	Jet Bearing Oil W	900 Black
FS-11	Non-Soap		Summer Type	Surrett Comp. 1100-hot	Calumet Comp. #7	Gargoyle Viscolite #20	Crater Comp. #2 hot	Lubcote Heavy - hot	Pinion Grease #3	Cardium Comp. #50	Pinion Grease Hard	R.L. Dark Pinion Heavy or Gearite	Onyx Lub. Heavy hot	1500 Black
FS-12	Heavy Oil		Winter Type	Penola C.T.R. Lub. 0			Winter Black Oil							
FS-13	Heavy Oil		Summer Type	Nebula B			Summer Black Oil					Tractor Lub. #2		
FS-WP	Lime Base		150 to 200	Water-proof Grease	Polarine Water Pump	Gargoyle AA-#5	Water Pump Grease	Water Pump Grease	Water Pump Lub.	Water-proof Grease	Water Pump Grease	R.L. Water Pump Lub.	Water Pump Lub.	Water Pump Grease

EQUIPMENT

Note: Use oil and grease of type recommended by manufacturer. The following recommendations conform to usual grades for new or overhauled equipment. After considerable use, it may be advisable to use oil of the next higher viscosity number, or in extremely low temperatures to use oil of the next lower viscosity number.

"Permanent lubrication" is a term applied to anti-friction bearings on horizontal shafts on some equipment, that is, they require lubrication only about every six months. At this time all old grease should be flushed out with a light oil before refilling.

All four figure numbers refer to Navy Contract oils, all others to the table of trade names.

Where Navy Contract oils are indicated, any other contract oil of the same SAE No. may be substituted, except that the use of 2000 series oils should be avoided if the 1000 and 3000 series are available.

	<u>SUMMER</u> (Above 40° F)	<u>WINTER</u> (Below 40° F.)
<u>AIR COMPRESSORS</u>		
Engines	3065	3050
Compressor Cylinders	3065	3050
<u>AUTOMOBILES</u>		
Engine:		
Chevrolet	3050	3050
Ford	3080	3050
Plymouth & Dodge	3065	3050
Pontiac	3050	3050
Transmission:		
Chevrolet	04-1100	04-1100
Ford	04-1150	04-1100
Plymouth & Dodge	04-1150	04-1100
Pontiac	04-1150	04-1100
Differential:		
Chevrolet	03 (SAE-140)	03 (SAE-90)
Ford	02 (SAE-140)	02 (SAE-90)
Plymouth & Dodge	03 (SAE-140)	03 (SAE-90)
Pontiac	03 (SAE-140)	03 (SAE-90)
Steering Gear Housings	02 (SAE-140)	02 (SAE-90)
Universal Joints	G4	G4
Water Pumps		
Ford '37	3065	3065
Others	WP	WP
Wheel Bearings	G4	G4
Other Chassis Points	G5	G5

SUMMER
(Above 40° F)

WINTER
(Below 40° F.)

CONCRETE MIXERS

Engines	3050	3050
Journal Bearings Plain (Gun type)	G5	G5
Journal Bearings Plain (Screw cup)	G2	G2
Journal Bearings (Anti-friction)	G1	G1
Open Gears	G7	G6
Closed Gears	04-1150	04-1100

CRUSHER UNITS - GENERAL

<u>Tractor Type</u>		
Pitman and side bearings, plain	3065	3065
Drive Pulley bearings	G1	G1
<u>Plants</u>		
Engines (see power units)		
Crushers & Pitman: roller bearings	G4	G4
Conveyors: elevators, anti-friction	G4	G3
Conveyors: elevators, plain	G1	G1
Screen: anti-friction bearings	G4	G3
Screen: plain bearings	G1	G1

(Some manufacturers have permanently lubricated anti-friction bearings on horizontal shafts - grease every six months)

MOTOR PATROLS

Chassis Points	G5	G5
Engine:		
Caterpillar Diesel	Spec. Navy Cont. #67227 and 67088	Spec. Navy Cont. #67227 and 67088
Others	3080	3050
Gears (open)	G7	G6
Hydraulic Cylinders	3065	3050
Transmissions, Final Drives	04-1150	04-1100
Universal Joints	G4	G4
Water Pumps	WP	WP
Wheel Bearings	G4	G4

POWER UNITS (For large equipment)

Air cleaners (General)	3080	3080
Starting motors & Generator bearings	3050	3050
Gasoline Engines (general)	(3065 or 3080)	(3050 or 3065)

Diesel Engines

Allis-Chalmers (crankcase)	3080	3065
Buda (crankcase)	3065	3050
Caterpillar (crankcase)	Spec. Navy Cont. #67227 and 67088	Spec. Navy Cont. #67227 and 67088

	<u>SUMMER</u> (Above 40° F.)	<u>WINTER</u> (Below 40° F)
<u>Diesel Engines (cont.)</u>		
Caterpillar (cont.)		
Starting engine (gasoline)	3065 or 3080	3050
Crank sprocket shaft bearing	G5	G5
Cummins (crankcase)	3080-3065	3050
Hercules (crankcase)	3065	3050
Int. Harvester (crankcase)	3065	3050
Air cleaner	3080	3080
Fuel injector pump	3050	3050
Magneto coupling	01-9045	01-9045

ROCK DRILLS

Grease Pocket Type	G2	G2
Line Lubricators	2110	01-2075

SHOVELS & DRAGLINES (General)

Engines (See Power Units)		
Enclosed Gears	3100 or 3120	3050 or 3080
Open gears, racks, wire rope, etc.	G7	G6
Plain bearings, grease	wet, G2; dry G4	wet, G2; dry, G4
Roller bearings, grease	wet, G1; dry G3	wet, G1; dry, G3
Boom point sheaves, plain bearings,	G2	G2
anti-friction	G4	G4
Bearings, pins, links, lever	3065 to 1150	3050 to 1100
joints, etc. - oil can		
Universal joints	G4	G4

SHOVELS - LINK BELT

Engines (See Power Units)		
Bevel Gear Reservoir	02 (SAE-140)	02 (SAE-90)
Drive Axle Reservoir	02 (SAE-140)	02 (SAE-90)
Silent Chain casing	02 (SAE-140)	02 (SAE-90)
All high pressure fittings	G5	G5
All open gears	G7	G6

SHOVELS - OSGOOD

Engine crankcase	3065	3065
Control Units	3065	3050
Crowd Units	04-1150	3080
Anti-friction bearings	G4	G4
Plain bearings	wet, G2; dry, G4	wet, G2; dry, G4
Exposed gears	G7	G6

SHOVELS - SPEEDER

Engine (see Power Units)		
Grease tight cases	04-1150	1100
Silent chain, crowd chain	3050	3050
Alemite fittings	G5	G5
Open gears	G7	G6

TRACTORS

SUMMER
(Above 40° F)

WINTER
(Below 40° F)

Engine (See Power Units)

Allis-Chalmers:

Final Drive	04-1150	04-1100
Transmission	04-1150	04-1100
Track Wheels, Front Idlers, Equalizer, Crank bearings, Slide shaft bearings, Inner Crank bearings, Supporting Rollers, Inner Crank Slide, Bracket Bushings	04-1150	04-1100
Other Chassis Parts	G5	G5

Caterpillar:

Power Transmission		
Final drive case	04-1150	04-1100
Flywheel clutch collar shaft - Model 20, 25, 28, 30, 60, Model 35, 40, 50, RD4, RD6, RD7, RD8, Diesel 40, Diesel 50, Diesel 75	G5	G5
Flywheel clutch release bearing - Model 10, 15, 22	3080	3050
Model 60	G5	G5
Transmission cases - all models except 60	04-1150	04-1100
Model 60 bevel gear compart.	3080	3050
Model 60 speed change compart.	04-1150	04-1100
Steering clutch control lever sleeve - Model 30, 60, 70, RD4, RD6, RD7, RD8, Diesel 50 & 75	G5	G5
Steering clutch release bearing	3080	3050
Chassis		
Brake Pedal shaft	G5	G5
Front idler sprocket - Model 10, 15, 22, 28, 40, 50, RD4, RD6, RD7, RD8, Diesel 40, Diesel 50, Diesel 75	04-1150	04-1100
Model 20, 25, after No. 3C450, 35 after No. 5C653, 60	G5	G5
Track Carrier Rollers - Model 28, 40, 50, 70, RD4, RD6, RD7, Diesel 40, Diesel 50, Diesel 75	04-G8-G9-5190	04-3080-G8-G9
Model 35 (No. 5C1 to 5C652 inc.)		
25 (No. 3C1 to 3C450 inc.)	30, 60 G5	G5
Track rollers - Models 10, 15, 22, 25, 28, 35, 40, 50, 70, RD4, RD6, RD7, RD8, Diesel 40, Diesel 50, Diesel 75	04-G8-G9-5190	04-3080-G8-G9
Models 20, 25, (No. 3C1 to 3C450 inc.), 30, 35, (No. 5C1 to 5C652 inc.), 60	G5	G5
Track roller frame bearing	G5	G5

For wet locations the roller assemblies may be lubricated with a light lime base grease.

<u>TRACTORS (Cont.)</u>	<u>SUMMER</u> (Above 40° F.)	<u>WINTER</u> (Below 40° F.)
<u>Cletrac:</u>		
Fan (oil type)	3080	3080
Fan (grease type)	G4	G4
Air cleaners	3080	3080
Magneto	3050	3050
Distributor	G4	G4
Water Pump	WP	WP
Water pump (BD)	3080	3080
Power transmission		
Transmission & Final Drive	3100	3065
Clutch collar shaft	G4	G4
Track Wheel System (all types)	3100	3050
Chassis		
Spring Trunnions	3080	3080
Other grease lubrication	G4	G4
<u>International Harvester:</u>		
Fan Hub	04-1150	04-1100
Water Pump	04-1150	04-1100
Air cleaners	3065	3050
Clutch release bearings	04-1150	04-1100
Transmission & Final Drive	04-1150	04-1100
Front idlers & track rollers	04-1150	04-1100
Alemite push type fittings	04-1150	04-1100
<u>TRAILERS AND TRUCKS</u>		
<u>Engine:</u>		
Chevrolet	3050	3050
Dodge	3065	3050
Ford	3080	3050
FWD	3080	3050
GMC	3065	3050
International	3065	3050
Kenworth	3080	3050
Reo	3065	3050
Walter	3080	3050
Transmissions, Transfer Units:		
<u>Differentials:</u>		
Chevrolet (03 on 1940 models)	02 (SAE-140)	02 (SAE-90)
Dodge	02 (SAE-140)	02 (SAE-90)
Ford	02 (SAE-140)	02 (SAE-90)
FWD	02 (SAE-140)	02 (SAE-90)
GMC	04-1150	04-1100
International	02 (SAE-140)	02 (SAE-90)
Kenworth	04-1150	04-1100
Reo	02-(SAE-140)	02 (SAE-90)
Walter	04-1150	04-1100
<u>Universal Joints:</u>		
Oil-type	04-1150	04-1100
Grease type	G4	G4

	<u>SUMMER</u> (Above 40° F.)	<u>WINTER</u> (Below 40° F.)
Wheel bearings	G4	G4
Water pump bearings (grease type)	WP	WP
Chassis points	G5	G5
Steering gear housings	O2	O2

WELDERS

Engines and generator bearings	3050	3050
Grease points	G4	G4

SECOND EDITION

TO BE DETACHED AND
POSTED IN CAMP SHOP

GENERAL CLASSIFICATION
Oils (Navy Contract)

Light Oil.....	2075	SAE-60.....	1120 and 3120
SAE-10 (10W).....	2110	SAE-70.....	1150
SAE-20 (20W).....	2135 and 3050	SAE-80.....	1080 and 3065
SAE-30.....	2190 and 3065	SAE-90.....	1100 and 3080 or 3100) and
SAE-40.....	1080, 2250 and 3080	SAE-140.....	1120 or 1150 and 3120) Diff.
SAE-50.....	1100,	SAE-250.....	5190
		Transformer oil....	9045

) Trans.

Greases and Special Oils

The lubricants listed are general purpose grades. Most of these lubricants may be obtained from the manufacturer in a heavier or lighter grade, as may be required for unusual conditions.

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- FS-G2 - Similar to G1, but of heavier consistency suited for screw down cups.
- FS-G3 - A soda base grease for normal or abnormal temperatures and speeds under dry conditions, suitable for plain and anti-friction bearings, gear boxes and power transmissions.
- FS-G4 - Similar to G3, but heavier, for wheel bearings, etc.
- FS-G5 - Chassis lubricants for grease guns. (Different manufacturers use different bases).
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- FS-G7 - Similar to G6, but heavier, for warm weather operation (usually applied hot).
- FS-G8 - An unfilled lubricant, for loose and worn plain bearings and where leakage is a problem (not suitable for anti-friction bearings).
- FS-G9 - Similar to G8 but heavier grade (not suitable for anti-friction bearings).
- WP - A waterproof grease for water pumps.

TABULATION OF TRADE NAMES OF VARIOUS TYPES OF LUBRICANTS

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FS-01	Light Oil	44 Sec. at 210° F.		Zerice 44	Calol Ice Machine	S/V Florex C	Cetus Oil	Eskimo B	#130 Oil	Dione #22		Red Line Hydraulic Oil		
FS-02	Extreme Pressure Hypoid	90 E.P. 140 E.P.			R.P.M. E.P.		Hypoid Thuban	Gulf E.P.	Gilmore E.P.	Super Gear Lub.		Red Line E.P. Gear Lub.	Opaline E.P. Gear Lub.	E. P. Lub.
FS-03	Extreme Pressure Hypoid	90 E.P. 140 E.P.		Escolium Expee Compound	R.P.M. Hypoid Lub.	Cargoyle Mobil-Grease CX & GXH	Thuban	Gulf Hypoid Lub.	Special Hypoid Lub.	Hypoid Lub.		Red Line Hypoid Lub.	Extreme Duty Hypoid Lub.	Hypoid Lub.
FS-04	Transmission & Differential	90 140 250		Escolium Gear Oil	R.P.M. Gear Lub.	Cargoyle Mobil-oil	Thuban Compound	Trans-mission Lub.	600 Gear Lub.	Trans-mission Oil		Motoreze Wax Gear Lub.	Opaline Gear Lub.	Gear Oil
FS-01	Lime Base		300	Castrolum 0			Star Grease 00	Supreme Cup #1		Unedo Cup Grease #1		Red Line Cup #2	Opaline Pressure System Grease	Cup Grease #1
FS-02	Lime Base		200	Castrolum 2	R.P.M. Cup Grease	Cargoyle AA - #3	Star Grease #3	Supreme Cup #2		Unedo Cup Grease #3		Red Line Cup #3		Cup Grease #3
FS-03	Soda Base		Over 300	Escolium A & A4	Calol H.M.P. #1	General Gearcote XX or XXX	Marfak #1	Triplex Lub.	Gear Lub. Medium	Indus Grease #3		Ball Roll Light or X-Light	Bearing Grease A.F.	Electric Motor Grease
FS-04	Soda Base		200	Escolium B & C	R.P.M. Wheel Bearing	Cargoyle Mobil-grease #5	Marfak #3	H.M. Grease	Wheel Bearing Lub.	Wheel Bearing Grease		Red Line Wheel Bearing Lub.	Opaline Universal Grease	U.W. Lub. Heavy
FS-05	Base as Indicated		250 to 400	Chasie Lub. L.H. XX Spec.Lime	R.P.M. Chassis Lub.	Cargoyle Mobil-Grease #2	Marfak #1#2 (Soda)	Chassis Lub. Lime-Sum. Alum-Win.	Sturdy Chassis Lub.	Super Chassis Lub.		Red Line Chassis Lub. Alum.Base	Opaline Chassis Lub.	Chassis Lub. W.G. or S.G. Alum.Base
FS-06	Non-Soap		Winter Type	Surrett Comp. 800 - hot 890 - cold	Calumet Comp. #5	Cargoyle Viscolite #10	Crater Comp. #1 Cold	Lubcote Medium hot	Pinion Grease #2	Cardium Comp. #10		Red Line Dark Pinion or Unacal Oil W	Jet Bearing Oil W	900 Black
FS-07	Non-Soap		Summer Type	Surrett Comp. 1100-hot	Calumet Comp. #7	Cargoyle Viscolite #20	Crater Comp. #2 hot	Lubcote Heavy - hot	Pinion Grease #3	Cardium Comp. #50		R.L. Dark Pinion Lub. Heavy or Gearite	Onyx Lub. Heavy hot	1500 Black
FS-08	Heavy Oil		Winter Type	Panola G.T.R. Lub. 0			Winter Black Oil							
FS-09	Heavy Oil		Summer Type	Nebula B			Summer Black Oil					Tractor Lub. #2		
FS-WP	Lime Base		150 to 200	Water-proof Grease	Polarine Water Pump	Cargoyle Viscolite AA-#5	Water Pump Grease	Water Pump Grease	Water Pump Lub.	Water-proof Grease		R.L. Water Pump Lub.	Water Pump Lub.	Water Pump Grease

EQUIPMENT

Note: Use oil and grease of type recommended by manufacturer. The following recommendations conform to usual grades for new or overhauled equipment. After considerable use, it may be advisable to use oil of the next higher viscosity number, or in extremely low temperatures to use oil of the next lower viscosity number.

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Where Navy Contract oils are indicated, any other contract oil of the same SAE No. may be substituted, except that the use of 2000 series oils should be avoided if the 1000 and 3000 series are available.

	<u>SUMMER</u> (Above 40° F)	<u>WINTER</u> (Below 40° F.)
<u>AIR COMPRESSORS</u>		
Engines	3065	3050
Compressor Cylinders	3065	3050

AUTOMOBILES

Engine:		
Chevrolet	3050	3050
Ford	3080	3050
Plymouth & Dodge	3065	3050
Pontiac	3050	3050
Transmission:		
Chevrolet	04-1100	04-1100
Ford	04-1150	04-1100
Plymouth & Dodge	04-1150	04-1100
Pontiac	04-1150	04-1100
Differential:		
Chevrolet	03 (SAE-140)	03 (SAE-90)
Ford	02 (SAE-140)	02 (SAE-90)
Plymouth & Dodge	03 (SAE-140)	03 (SAE-90)
Pontiac	03 (SAE-140)	03 (SAE-90)
Steering Gear Housings	02 (SAE-140)	02 (SAE-90)
Universal Joints	G4	G4
Water Pumps		
Ford '37	3065	3065
Others	WP	WP
Wheel Bearings	G4	G4
Other Chassis Points	G5	G5

SUMMER
(Above 40° F)

WINTER
(Below 40° F.)

CONCRETE MIXERS

Engines	3050	3050
Journal Bearings Plain (Gun type)	G5	G5
Journal Bearings Plain (Screw cup)	G2	G2
Journal Bearings (Anti-friction)	G1	G1
Open Gears	G7	G6
Closed Gears	04-1150	04-1100

CRUSHER UNITS - GENERAL

<u>Tractor Type</u>		
Pitman and side bearings, plain	3065	3065
Drive Pulley bearings	G1	G1
<u>Plants</u>		
Engines (see power units)		
Crushers & Pitman: roller bearings	G4	G4
Conveyors: elevators, anti-friction	G4	G3
Conveyors: elevators, plain	G1	G1
Screen: anti-friction bearings	G4	G3
Screen: plain bearings	G1	G1

(Some manufacturers have permanently lubricated anti-friction bearings on horizontal shafts - grease every six months)

MOTOR PATROLS

Chassis Points	G5	G5
Engine:		
Caterpillar Diesel	Spec. Navy Cont. #67227 and 67088	Spec. Navy Cont. #67227 and 67088
Others	3080	3050
Gears (open)	G7	G6
Hydraulic Cylinders	3065	3050
Transmissions, Final Drives	04-1150	04-1100
Universal Joints	G4	G4
Water Pumps	WP	WP
Wheel Bearings	G4	G4

POWER UNITS (For large equipment)

Air cleaners (General)	3080	3080
Starting motors & Generator bearings	3050	3050
Gasoline Engines (general)	(3065 or 3080)	(3050 or 3065)

Diesel Engines

Allis-Chalmers (crankcase)	3080	3065
Buda (crankcase)	3065	3050
Caterpillar (crankcase)	Spec. Navy Cont. #67227 and 67088	Spec. Navy Cont. #67227 and 67088



SUMMER
(Above 40° F.)

WINTER
(Below 40° F)

Diesel Engines (cont.)

Caterpillar (cont.)

Starting engine (gasoline)	3065 or 3080	3050
Crank sprocket shaft bearing	G5	G5
Cummins (crankcase)	3080-3065	3050
Hercules (crankcase)	3065	3050
Int. Harvester (crankcase)	3065	3050
Air cleaner	3080	3080
Fuel injector pump	3050	3050
Magneto coupling	01-9045	01-9045

ROCK DRILLS

Grease Pocket Type	G2	G2
Line Lubricators	2110	01-2075

SHOVELS & DRAGLINES (General)

Engines (See Power Units)

Enclosed Gears	3100 or 3120	3050 or 3080
Open gears, racks, wire rope, etc.	G7	G6
Plain bearings, grease	wet, G2; dry G4	wet, G2; dry, G4
Roller bearings, grease	wet, G1; dry G3	wet, G1; dry, G3
Boom point sheaves, plain bearings,	G2	G2
anti-friction	G4	G4
Bearings, pins, links, lever	3065 to 1150	3050 to 1100
joints, etc. - oil can		
Universal joints	G4	G4

SHOVELS - LINK BELT

Engines (See Power Units)

Bevel Gear Reservoir	02 (SAE-140)	02 (SAE-90)
Drive Axle Reservoir	02 (SAE-140)	02 (SAE-90)
Silent Chain casing	02 (SAE-140)	02 (SAE-90)
All high pressure fittings	G5	G5
All open gears	G7	G6

SHOVELS - OSGOOD

Engine crankcase	3065	3065
Control Units	3065	3050
Crowd Units	04-1150	3080
Anti-friction bearings	G4	G4
Plain bearings	wet, G2; dry, G4	wet, G2; dry, G4
Exposed gears	G7	G6

SHOVELS - SPEEDER

Engine (see Power Units)		
Grease tight cases	04-1150	1100
Silent chain, crowd chain	3050	3050
Alemite fittings	G5	G5
Open gears	G7	G6

TRACTORSSUMMER
(Above 40° F)WINTER
(Below 40° F)

Engine (See Power Units)		
<u>Allis-Chalmers:</u>		
Final Drive	04-1150	04-1100
Transmission	04-1150	04-1100
Track Wheels, Front Idlers, Equal- izer, Crank bearings, Slide shaft bearings, Inner Crank bearings, Supporting Rollers, Inner Crank Slide, Bracket Bushings	04-1150	04-1100
Other Chassis Parts	G5	G5
<u>Caterpillar:</u>		
Power Transmission		
Final drive case	04-1150	04-1100
Flywheel clutch collar shaft - Model 20, 25, 28, 30, 60, Model 35, 40, 50, RD4, RD6, RD7, RD8, Diesel 40, Diesel 50, Diesel 75	G5 04-1150	G5 04-1100
Flywheel clutch release bearing - Model 10, 15, 22 Model 60	3080 G5	3050 G5
Transmission cases - all models except 60 Model 60 bevel gear compart. Model 60 speed change compart.	04-1150 3080 04-1150	04-1100 3050 04-1100
Steering clutch control lever sleeve - Model 30, 60, 70, RD4, RD6, RD7, RD8, Diesel 50 & 75	G5	G5
Steering clutch release bearing	3080	3050
Chassis		
Brake Pedal shaft	G5	G5
Front idler sprocket - Model 10, 15, 22, 28, 40, 50, RD4, RD6, RD7, RD8, Diesel 40, Diesel 50, Diesel 75 Model 20, 25, after No. 3C450, 35 after No. 5C653, 60	04-1150 G5	04-1100 G5
Track Carrier Rollers - Model 28, 40, 50, 70, RD4, RD6, RD7, Diesel 40, Diesel 50, Diesel 75 Model 35 (No. 5C1 to 5C652 inc.) 25 (No. 3C1 to 3C450 inc.) 30, 60	04-G8-G9-5190 G5	04-3080-G8-G9 G5
Track rollers - Models 10, 15, 22 25, 28, 35, 40, 50, 70, RD4, RD6, RD7, RD8, Diesel 40, Diesel 50, Diesel 75 Models 20, 25, (No. 3C1 to 3C450 inc.), 30, 35, (No. 5C1 to 5C652 inc.), 60	04-G8-G9-5190 G5	04-3080-G8-G9 G5
Track roller frame bearing	G5	G5

For wet locations the roller assemblies may be lubricated with a light lime base grease.



TRACTORS (Cont.)SUMMER
(Above 40° F.)WINTER
(Below 40° F.)Cletrac:

Fan (oil type)	3080	3080
Fan (grease type)	G4	G4
Air cleaners	3080	3080
Magneto	3050	3050
Distributor	G4	G4
Water Pump	WP	WP
Water pump (BD)	3080	3080
Power transmission		
Transmission & Final Drive	3100	3065
Clutch collar shaft	G4	G4
Track Wheel System (all types)	3100	3050
Chassis		
Spring Trunnions	3080	3080
Other grease lubrication	G4	G4

International Harvester:

Fan Hub	04-1150	04-1100
Water Pump	04-1150	04-1100
Air cleaners	3065	3050
Clutch release bearings	04-1150	04-1100
Transmission & Final Drive	04-1150	04-1100
Front idlers & track rollers	04-1150	04-1100
Alemite push type fittings	04-1150	04-1100

TRAILERS AND TRUCKSEngine:

Chevrolet	3050	3050
Dodge	3065	3050
Ford	3080	3050
FWD	3080	3050
GMC	3065	3050
International	3065	3050
Kenworth	3080	3050
Reo	3065	3050
Walter	3080	3050

Transmissions, Transfer Units:Differentials:

Chevrolet (03 on 1940 models)	02 (SAE-140)	02 (SAE-90)
Dodge	02 (SAE-140)	02 (SAE-90)
Ford	02 (SAE-140)	02 (SAE-90)
FWD	02 (SAE-140)	02 (SAE-90)
GMC	04-1150	04-1100
International	02 (SAE-140)	02 (SAE-90)
Kenworth	04-1150	04-1100
Reo	02-(SAE-140)	02 (SAE-90)
Walter	04-1150	04-1100

Universal Joints:

Oil-type	04-1150	04-1100
Grease type	G4	G4

	<u>SUMMER</u> (Above 40° F.)	<u>WINTER</u> (Below 40° F.)
Wheel bearings	G4	G4
Water pump bearings (grease type)	WP	WP
Chassis points	G5	G5
Steering gear housings	O2	O2

WELDERS

Engines and generator bearings	3050	3050
Grease points	G4	G4

